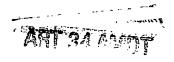
[Amendment under PCT Article 34 Filed on March 26, 2004]

What is claimed is:

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- 1 1. A porous substrate, comprising a plurality of porous layers
 thereon, wherein the average opening diameter of pores in a porous
 layer of said plurality of porous layers positioned in an
 outermost surface is smaller than the average diameter of pores
 in a porous layer of said plurality of porous layers positioned
 on a substrate side relative to said porous layer positioned in
 said outermost surface.
- 2. A porous substrate, comprising a plurality of porous layers 1 thereon, wherein the average opening diameter of pores in a porous 2 layer of said plurality of porous layers positioned in an 3 outermost surface is smaller than the average diameter of pores 4 in a porous layer of said plurality of porous layers positioned 5 on a substrate side relative to said porous layer positioned in 6 7 said outermost surface; and the volume porosity of said plurality 8 of porous layers is 10 % - 90 %.
- 3. A porous substrate, comprising two porous layers thereon, wherein the average opening diameter of pores in a first porous layer of said two porous layers positioned in an outermost surface is smaller than the average diameter of pores in a second porous layer positioned on a substrate side relative to said first porous layer; and more than 50 % of said pores in said first porous layer penetrate from the surface of said first porous layer to the



- 8 interface between said first and second porous layer.
- 4. A porous substrate, comprising two porous layers thereon,
- 2 wherein the average opening diameter of pores in a first porous
- 3 layer of said two porous layers positioned in an outermost surface
- 4 is smaller than the average diameter of pores in a second porous
- 5 layer positioned on a substrate side relative to said first porous
- 6 layer; more than 50 % of said pores in said first porous layer
- 7 penetrate from the surface of said first porous layer to the
- 8 interface between said first and second porous layer; and the
- 9 volume porosity of said first and second porous layer is 10 %
- 10 90 %.
 - 5. The porous substrate according to claim 3 or 4, wherein
- 2 said first porous layer comprises a metal material.
- 1 6. The porous substrate according to claim 3 or 4, wherein
- 2 said first porous layer comprises a metal oxide, a metal nitride,
- 3 or a metal carbide.
- 7. The porous substrate according to claim 3 or 4, wherein
- 2 said second porous layer comprises a semiconductor material.
- 1 8. The porous substrate according to claim 3 or 4, wherein
- 2 said second porous layer comprises a group III nitride series
- 3 compound semiconductor material.
- 1 9. The porous substrate according to claim 3 or 4, wherein
- 2 said first porous layer comprises TiN or Pt, and said second



- 3 porous layer comprises GaN.
- 1 10. [Amended] The porous substrate according to claim 3 or 4,
- 2 wherein said average opening diameter of said pores in said first
- 3 porous layer is not more than 1µm.
- 1 11. The porous substrate according to claim 3 or 4, wherein
- 2 the film thickness of said first porous layer is not more than
- 3 1µm.
- 1 12. A fabrication method for a porous substrate, comprising
- 2 growing two or more different material layers on a substrate,
- 3 heating said each layer, and thereby forming two or more porous
- 4 layers with pores therein.
- 1 13. A GaN series semiconductor layered substrate, comprising
- 2 a GaN series semiconductor layer grown on a porous substrate
- 3 defined in any one of claims 1-11.
- 1 14. A fabrication method for a GaN series semiconductor
- 2 layered substrate, comprising growing two or more different
- 3 material layers on a substrate, heating said each layer, thereby
- 4 forming a porous substrate with two or more porous layers having
- 5 pores therein, and growing a GaN semiconductor layer on that
- 6 porous substrate.

